

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known		
				Application Number	10/672,735	
				Filing Date	09/26/2003	
				First Named Inventor	Eric B. Kmiec	
				Art Unit	1645 1634	
				Examiner Name	To be assigned Sarae Bausch	
Sheet	1	of	2	Attorney Docket Number		41428-0102 CON

U.S. PATENT DOCUMENTS

*Examiner Initials	Cite No.	DOCUMENT NUMBER Number - Kind Code (if known) ²	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
SB	A1	US 5,929,043	07-27-1999	Dayn	

FOREIGN PATENT DOCUMENTS

*Examiner Initials	Cite No.	Foreign Patent Document County Code ³ -Number ⁴ -Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
SB	B1	PCT WO 93/05178	03-18-1993	Sena <i>et al.</i>		
	B2	PCT WO 98/08975	03-05-1998	Kigawa <i>et al.</i>		
	B3	PCT WO 02/10457	02-07-2002	Belotserkovkii <i>et al.</i>		
	B4	PCT WO 02/077286	10-03-2002	Wagner <i>et al.</i>		
SB	B5	PCT WO 02/079495	10-10-2002	Kmiec <i>et al.</i>		

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				Examiner Name	To be assigned <i>S. Bausch</i>
Sheet	2	of	2	Attorney Docket Number	41428-0102 CON

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Examiner Initials	Cite No. 1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
SB	C1	European Search Report for EP 02 77 6053, (December 29, 2004).	

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U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
NaPro-2 CONSERIAL NO.
10/672,735INFORMATION DISCLOSURE
STATEMENT BY APPLICANTAPPLICANT
Kmiec et al.FILING DATE
September 26, 2003GROUP
~~1645~~ 1634

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
SB	5,958,681	09/1999	Wetmur et al.			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
SB	EP 0450370	09/1991	EPO				

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		APPLICANT Kmiec et al.	
		FILING DATE September 26, 2003	GROUP 16451634

U.S. PATENT DOCUMENTS

EXAMINER INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
SB	6,428,964	08/2002	Shuber			
	6,335,164	01/2002	Kigawa et al.			
	6,312,914	11/2001	Kardos et al.			
	6,303,376	10/2001	Glazer			
	6,303,304	10/2001	Shuber et al.			
	6,268,490	07/2001	Imanishi et al.			
	6,255,113	07/2001	Zarling et al.			
	6,245,565	06/2001	Dayn			
	6,200,812	03/2001	Pati et al.			
	6,174,683	01/2001	Hahn et al.			
	6,159,686	12/2000	Kardos et al.			
	6,150,516	11/2000	Brenner et al.			
	6,136,601	10/2000	Meyer, Jr. et al.			
	6,107,545	08/2000	Mahajan			
	6,074,853	06/2000	Pati et al.			
	6,043,060	03/2000	Imanishi			
	6,010,907	01/2000	Kmiec et al.			
	5,985,557	11/1999	Prudent et al.			
	5,965,427	10/1999	Dolgano et al.			
	5,965,361	10/1999	Kigawa et al.			
	5,948,653	09/1999	Pati et al.			
	5,929,043	07/1999	Dayn			
	5,928,870	07/1999	Lapidus et al.			
	5,912,340	06/1999	Kutyavin et al.			
	5,891,656	04/1999	Zarling et al.			
	5,888,983	03/1999	Kmiec et al.			
	5,871,984	02/1999	Kmiec			
V	5,776,744	07/1998	Glazer et al.			
SB	5,763,240	06/1998	Zarling et al.			

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	APPLICANT Kmiec et al.	
	FILING DATE September 26, 2003	GROUP 1645-1634

U.S. PATENT DOCUMENTS

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SB	5,760,012	06/1998	Kmiec et al.			
	5,756,325	05/1998	Kmiec			
	5,736,410	04/1998	Zarling et al.			
	5,719,023	02/1998	Zarling et al.			
	5,698,397	12/1997	Zarling et al.			
	5,674,698	10/1997	Zarling et al.			
	5,670,325	09/1997	Lapidus et al.			
	5,670,316	09/1997	Sena et al.			
	5,565,350	10/1996	Kmiec			
	5,506,098	04/1996	Zarling et al.			
	5,468,629	11/1995	Calhoun			
	5,432,272	07/1995	Benner			
	5,273,881	12/1993	Sena et al.			
	5,223,414	06/1993	Zarling et al.			
	4,888,274	12/1989	Radding et al.			
	2002/0090361	07/2002	Zarling et al.			
	2002/0061530	07/2002	Zarling et al.			
↓	2002/0032530	05/2002	Belotserkovskii et al.			
SB	2001/0044107	03/2002	Pati et al.			

FOREIGN PATENT DOCUMENTS

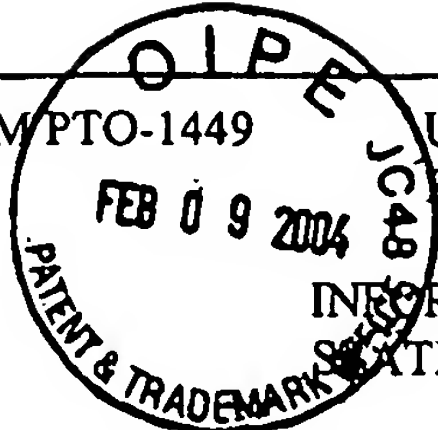
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SB	WO 02/10457	02/2002	WO				
	WO 02/10364	02/2002	WO				
	WO 01/92512	12/2001	WO				
	WO 01/73002	10/2001	WO				
↓	WO 00/66604	11/2000	WO				
SB	WO 00/56748	09/2000	WO				

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FOREIGN PATENT DOCUMENTS

SB	WO 00/50748	08/2000	WO				
	WO 99/14226	03/1999	WO				
	WO 98/39352	09/1998	WO				
	WO 98/08975	03/1998	WIPO				
	EP 0 799 897	10/1997	EPO				
	WO95/18236	06/1995	WIPO				
	EP 0 687 738	02/1995	EPO				
	WO 94/03639	02/1994	WIPO				
	WO 93/22443	11/1993	WIPO				
	WO 93/05178	03/1993	WIPO				
	WO 93/05177	03/1993	WIPO				
	WO 92/08791	05/1992	WIPO				
	WO 91/17267	11/1991	WIPO				
	EP 0 322 311	12/1988	EPO				
	63-109781	05/1988	Japan				
SB	WO 87/01730	03/1987	WIPO				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
SB	Angov, et al., "The RecA Gene From the Thermophile Thermus Aquaticus YT-1: Cloning, Expression and Characterization", <i>Journal of Bacteriology</i> , pp. 1405-1412, Mar. 1994.
	Anonymous, "Gene Characterization Kits," <i>Stratagene Catalog</i> : p. 39 (1988).
	Ascenzioni et al., "Mammalian Artificial Chromosomes - Vectors for Somatic Gene Therapy," <i>Cancer Letters</i> vol. 118 no. 2: pp. 135-142 (1997).
	Baer et al., "Coping with Kinetic and Thermodynamic Barriers: RMCE, and Efficient Strategy for the Targeted Integration of Transgenes," <i>Current Opinion in Biotechnology</i> vol. 12: pp. 473-480 (2001).
	Belotserkovskii et al., "DNA Hybrids Stabilized by Heterologies," <i>Biochemistry</i> vol. 38: pp. 10785-10792 (1999).
	Belovsterkovskii et al., "Peptide Nucleic Acid (PNA) Facilitates Multistranded Hybrid Formation between Linear Double-Stranded DNA Targets and RecA Protein-Coated Complementary Single-Stranded DNA Probes," <i>Biochemistry</i> vol. 41: pp. 3686-3692 (2002).
SB	Bianco et al., "RecA Protein," <i>Encyclopedia of Life Sciences</i> , MacMillan Reference Ltd: pp. 1-11 (20 November 1998).

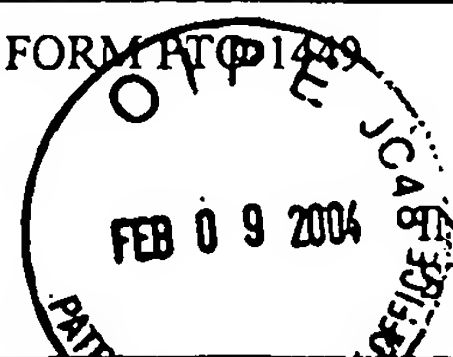
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	FILING DATE September 26, 2003	GROUP 1645 1624	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
SB	Blake et al., "DNA Sequence of Recombinase-Binding Sites Can Determine Xer Site-Specific Recombination Outcome," <i>Molecular Microbiology</i> vol. 23 no. 2: pp. 387-398 (1997).
	Brenner et al., "In vitro Cloning of Complex Mixtures of DNA on Microbeads: Physical Separation of Differentially Expressed cDNAs," <i>Proc. Natl. Acad. Sci. USA</i> vol. 97 no. 4: pp. 16650-16670 (2000).
	Brune et al., "Reviews: Forward with BACs; New Tools for Herpesvirus Genomics," <i>Trends in Genetics</i> vol. 16 no. 6: pp. 254-259 (2001).
	Bryant, et al., "On the mechanism of renaturation of complementary DNA strands by the recA protein of <i>Escherichia coli</i> ", <i>Proc. Natl. Acad. Sci. USA</i> , 82:297 (1985)
	Cassuto, et al., "Partial purification of an activity from human cells that promotes homologous pairing and the formation of heteroduplex DNA in the presence of ATP", <i>Mol. Ge. Genet.</i> , 208:10 (1987)
	Cheng, et al., "RecA-Directed Hybridization of Psoralen-Monoadducted DNA oligonucleotides to Duplex Targets," in <i>Photochemical Probes in Biochemistry</i> (P.E. Nielsen, ed.), pp. 169-177 (1989).
	Cheng, et al., "Use of Psoralen-modified oligonucleotides to Trap Three-stranded RecA-DNA Complexes and Repair of These Cross-linked Complexes by ABC Excinuclease." <i>J. Biol. Chem.</i> 263:15110 (1988).
	Choi et al., "Construction of a Bacterial Artificial Chromosome Library," <i>Methods in Molecular Biology</i> vol. 175: pp. 57-68 (2001).
	Chow, et al., "Ionic Inhibition of Formation of RecA Nucleoprotein Networks Blocks Homologous Pairing", <i>PNAC</i> , vol. 82, pp. 5646-5650, Sep. 1985
	Cox et al., "recA Protein of <i>Escherichia Coli</i> Promotes Branch Migration, a Kinetically Distinct Phase of DNA Strand Exchange," <i>Proc. Natl. Acad. Sci. USA</i> vol. 78: p. 3433 (1981).
	Cox, et al., "Enzymes of General Recombination" <i>Ann. Rev. Biochem.</i> 56:229-262 (1987).
	D'Amours et al., "The MRE11 Complex: At the Crossroads of DNA Repair and Checkpoint Signalling," <i>Nature Reviews</i> vol. 3: pp. 317-327 (May 2002).
	Demidov et al., "Kinetics and Mechanism of the DNA Double Helix Invasion by Pseudocomplementary Peptide Nucleic Acids," <i>Proc. Natl. Acad. Sci. USA</i> vol. 99 no. 9: pp. 5953-5958 (April 30, 2002).
	Dervan, Peter B., "Design of Sequence-Specific DNA-Binding Molecules." <i>Science</i> , vol. 232 (Apr. 25, 1986), pp. 464-471.
	Di Capua, et al., "Characterization of complexes between recA Protein and Duplex DNA by Electron Microscopy," <i>J. Mol. Biol.</i> 157:87-103 (1982)
↓	Dreyer, et al., "Sequence-specific cleavage of single-stranded DNA: Oligodeoxynucleotide-EDTA-Fe(II)", <i>Proc. Natl. Acad. Sci. USA</i> , 82:968 (1985)
SB	Dubertret et al., "Single-Mismatch Detection Using Gold-Quenched Fluorescent Oligonucleotides," <i>Nature Biotechnology</i> vol. 19: pp. 365-370 (2001).

EXAMINER

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
SB	Eisen, et al., "A recombinase from <i>Drosophila melanogaster</i> embryos", <i>Proc. Natl. Acad. Sci. USA</i> , 85:7481 (1988)
	Eriksson et al., "PNA-Nucleic Acid Complexes. Structure, Stability and Dynamics," <i>Quarterly Reviews of Biophysics</i> vol. 29 no. 4: pp. 369-394 (1996).
	Fabb et al., "Yeast Artificial Chromosome Vectors," <i>Molecular and Cell Biology of Human Gene Disorders Therapeutics</i> vol. 5: pp. 104-124 (1995).
	Fan et al., "Parallel Genotyping of Human SNPs Using Generic High-Density Oligonucleotide Tag Arrays," <i>Genome Research</i> vol. 10: pp. 853-860 (2000).
	Faruqi et al., "Peptide nucleic acid-targeted mutagenesis of a chromosomal gene in mouse cells", <i>Proc. Natl. Acad. Sci. USA</i> , 96: 1398-1403 (1998)
	Feng et al., "Site-Specific Chromosomal Integration in Mammalian Cells: Highly Efficient CRE Recombinase-Mediated Cassette Exchange," <i>Journal of Molecular Biology</i> vol. 292: pp. 779-785 (1999).
	Ferrin et al., "Selective Cleavage of Human DNA: RecA-Assisted Restriction Endonuclease (RARE) Cleavage," <i>Science</i> vol. 254: pp. 1494-1497 (1991).
	Ferrin et al., "Sequence-Specific Ligation of DNA Using RecA Protein," <i>Proc. Natl. Acad. Sci. USA</i> vol. 95: pp. 2152-2157 (March 1998).
	Ferrin, et al., "Long-range mapping of gaps and telomeres with RecA-assisted restriction endonuclease (RARE) cleavage", <i>Nature Genetics</i> , vol. 6, pp.379-383, Apr. 1994
	Francois, et al., "Inhibition of Restriction Endo-nuclease Cleavage via Triple helix Formation by Homopyrimidine Oligonucleotides." <i>Biochem</i> , 28:9617-9619 (1989).
	Francois, et al., "Sequence-specific recognition and cleavage of duplex DNA via triple-helix formation by oligonucleotides covalently linked to a phenanthroline-copper chelate." <i>Proc. Natl. Acad. Sci. USA</i> 86:9702-9706 (1989).
	Freitag, et al., "Affinity Chromatography of RecA Protein and RecA Nucleoprotein Complexes on RecA Protein-Agarose Columns," <i>J. Biol. Chem.</i> 263(36):19525-19534(1988)
	Fujisawa, et al., "Sequence of the T4 recombination gene, <i>UvsX</i> , and its comparison with that of the <i>recA</i> gene of <i>Escherichia coli</i> ", <i>Nucleic Acids Res.</i> , 13:7473 (1985)
	Fujiyama, et al., "Cloning and structural analyses of hepatitis B virus DNAs, subtype <i>adr</i> ", <i>Nucleic Acids Research</i> , 11:4601 (1983)
	Galibert, et al., "Nucleotide sequence of the hepatitis B virus genome (subtype <i>ayw</i>) cloned in <i>E. coli</i> ", <i>Nature</i> , 281:646 (1979)
↓	Gamper et al., "Evidence for a Four-Strand Exchange Catalyzed by the RecA Protein," <i>Biochemistry</i> vol. 39: pp. 15272-15281 (2000).
SB	Ganea, et al., "Characterization of an ATP-Dependent DNA Strand Transferase from Human Cells", <i>Mol. Cell Biol.</i> , 7:3124 (1987)

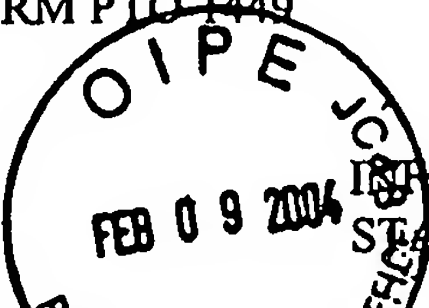
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		September 26, 2003	1645-1634

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
SB	Golub, et al., "Inhibition of RNA polymerase II transcription by oligonucleotide-RecA protein filaments targeted to promoter sequences", <i>Proc. Natl. Acad. Sci., USA</i> , vol. 90, pp. 7186-7190, Aug. 1993
	Golub, et al., "Joints Formed by RecA Protein From Oligonucleotides and Duplex DNA Block Initiation and Elongation of Transcription", <i>Nucleic Acids Research</i> , vol. 20, No. 12, pp. 3121-3125, 1992.
	Gonda, et al., "By Searching Processively RecA Protein Pairs DNA Molecules That Share a Limited Stretch of Homology", <i>Cell</i> , 34:647-654 (1983).
	Gonda, et al., "The Mechanism of the Search for Homology Promoted by RecA Protein", <i>The Journal Of Biological Chemistry</i> , vol. 261, No. 28, pp. 13087-13096, Oct. 1986
	Good et al., "Review: Progress in Developing PNA as a Gene-Targeted Drug," <i>Antisense Nucleic Acid Drug Development</i> vol. 7 no. 4: pp. 431-437 (1997).
	Gorman et al., "Site-Specific Gene Targeting for Gene Expression in Eukaryotes," <i>Current Opinion in Biotechnology</i> vol. 11: pp. 455-460 (2000).
	Griffith, et al., "Intercalating Drugs Markedly Affect the Ability to the <i>E. coli</i> RecA Protein to Insert Small Primers into Homologous Duplex DNA," <i>J. Cell Biochem.</i> 13E:287(Suppl.)(1989).
	Griffith, et al., "RecA Protein Rapidly Crystallizes in the Presence of Spermidine: A Variable Step in its Purification and Physical Characterization", <i>Biochemistry</i> , 24:158 (1985)
	Halbrook, et al., "Purification and Characterization of a DNA-pairing and Strand Transfer Activity from Mitotic <i>Saccharomyces cerevisiae</i> ", <i>Journal of Biological Chemistry</i> , 264:21403 (1989)
	Hanvey, et al., "Site-specific inhibition of EcoRI restriction/modification enzymes by a DNA triple helix." <i>Nucleic Acids Res.</i> 18(1):157 (1989)
	Henegariu et al., "Custom Fluorescent-Nucleotide Synthesis as an Alternative Method for Nucleic Acid Labeling," <i>Nature Biotechnology</i> vol. 18: pp. 345-348 (2000).
	Honigberg et al., "The Pairing Activity of Stable Nucleoprotein Filaments Made from recA Protein, Single-Stranded DNA, and Adenosine 5'-(γ -Thio)triphosphate," <i>Journal of Biological Chemistry</i> vol. 260 no. 21: pp. 11845-11851 (September 25, 1985).
	Honigberg, et al., "Ability of RecA Protein to Promote a Search for Rare Sequences in Duplex DNA", <i>PNAC</i> , vol. 83, pp. 9586-9590, Dec. 1986
	Hsieh, et al., "Formation of Joint DNA Molecules by Two Eukaryotic Strand Exchange Proteins Does Not Require Melting of a DNA Duplex", <i>J. Biol. Chem.</i> , 264:5089 (1989)
	Hsieh, et al., "Pairing of homologous DNA sequences by proteins: evidence for three-stranded DNA," <i>Genes & Development</i> , 4:1951 (1990).
✓	Hsieh, et al., "Partial Purification and Characterization of a Recombinase from Human Cells", <i>Cell</i> , 44:885 (1986)
SB	Hsieh, et al., "The synapsis event in the homologous pairing of DNAs: RecA recognizes and pairs less than one helical repeat of DNA", <i>Proc. Natl. Acad. Sci. USA</i> , 89:6492-6496 (1992)

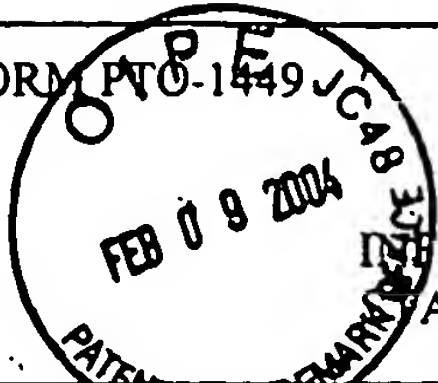
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

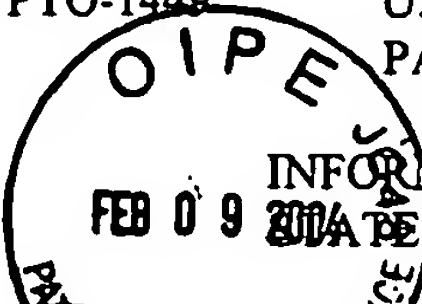
EXAMINER INITIALS	
SB	Huxley, "Review: Mammalian Artificial Chromosomes: A New Tool for Gene Therapy," <i>Gene Therapy</i> vol. 1 no. 1: pp. 7-12 (1994).
	Hyrup et al., "Review Article: Peptide Nucleic Acids (PNA): Synthesis, Properties and Potential Applications," <i>Bioorganic and Medicinal Chemistry</i> vol. 4 no. 1: pp. 5-23 (1996).
	Izvolsky et al., "Sequence-Specific Protection of Duplex DNA Against Restriction and Methylation Enzymes by Pseudocomplementary PNAs," <i>Biochemistry</i> vol. 39: pp. 10908-10913 (2000).
	Jayasena, et al., "Compliment Stabilized D-loop RecA-catalyzed Stable Pairing of Linear DNA Molecules at Internal Sites", <i>J. Mol. Biol.</i> , pp. 1015-1024 (1993)
	Kato, et al., "RecA Protein From an Extremely Thermophilic Bacterium, <i>Thermus Thermophilus</i> HB8", <i>J. Biochem</i> , vol. 114, pp. 926-929, 1993.
	Kawashima, et al., "Functional Domains of <i>Escherichia coli</i> RecA Protein Deduced From the Mutational Sites in the Gene", <i>Mol. Gen. Genet.</i> , vol. 193, pp. 288-292, 1984.
	Kenne, et al., "A DNA-recombinogenic activity in human cells", <i>Nucleic Acids Research</i> , 12:3057 (1984)
	Kido, et al., " <i>Escherichia coli</i> RecA Protein Modified with a Nuclear Location Signal Binds to Chromosomes in Living Mammalian Cells," <i>Experimental Cell Res.</i> 198:107-114 (1992).
	Kirk et al., "Single Nucleotide Polymorphism Seeking Long Term Association with Complex Disease," <i>Nucleic Acids Research</i> vol. 30 no. 15: pp. 3295-3311 (2002).
	Kirkpatrick, et al., "RecA Protein Promotes Rapid RNA-DNA Hybridization in Heterogeneous RNA Mixtures", <i>Nucleic Acids Research</i> pp. 4347-4353
	Kirkpatrick, et al., "RNA-DNA Hybridization Promoted by <i>E.coli</i> RecA Protein", <i>Nucleic Acid Research</i> , vol. 20, No. 16, pp. 4339-4346, (1992)
	Kmiec, et al., "Homologous Pairing of DNA Molecules by <i>Ustilago</i> Rec1 Is Promoted by Sequences of Z-DNA", <i>Cell</i> , 29:367-374 (1986)
	Kmiec, et al., "Homologous Pairing of DNA Molecules Promoted by a Protein from <i>Ustilago</i> ", <i>Cell</i> , vol. 29 pp. 367-374 (1982).
	Kmiec, et al., "Homologous Pairing Promoted by <i>Ustilago</i> Protein", <i>Cold Spring Harbor Symposia on Quantitative Biology</i> , Volume XLIX, 675-679, (1984)
	Kmiec, et al., "Synapsis Promoted by <i>Ustilago</i> Rec1 Protein", <i>Cell</i> , vol. 36, pp. 593-598, Mar. 1984
	Knight et al., "Tyrosine 264 in the recA Protein from <i>Escherichia coli</i> Is the Site of Modification by Photoaffinity Label 8-Azidoadenine", <i>J. Biol. Chem.</i> 260 (18):10185-91, Aug. 25, 1985
✓	Kokoris et al., "High-Throughput SNP Genotyping with the Masscode System," <i>Molecular Diagnosis</i> vol. 5 no. 4: pp. 329-340 (2000).
SB	Kolodner, et al., "Purification and characterization of an activity from <i>Saccharomyces cerevisiae</i> that catalyzes homologous pairing and strand exchange", <i>Proc. Natl. Acad. Sci. USA</i> , 84:5560 (1987)

EXAMINER

/Sarae Bausch/

DATE CONSIDERED 04/26/2006

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
SB	Koob, et al., "RecA-AC: single-site cleavage of plasmids and chromosomes at any predetermined restriction site", <i>Nucleic Acids Research</i> , vol. 20, No. 21, pp. 5831-5836, 1992.
	Kowalczykowski, et al., "DNA-strand exchange promoted by RecA protein in the absence of ATP: Implications for the mechanism of energy transduction in protein-promoted nucleic acid transactions", <i>Proc. Natl. Acad. Sci. USA</i> , vol. 92, pp.3478-3482
	Kowalczykowski, Stephen C., "Biochemistry of Genetic Recombination: Energetics and Mechanism of DNA Strand Exchange," <i>Annu. Rev. Biophys. Chem.</i> , vol. 20, pp. 539-575 (1991).
	Kricka et al., "Comparison of 5-Hydroxy-2, 3-Dihydrophthalazine-1, 4-Dione and Luminol as Co-Substrates for Detection of Horseradish Peroxidase in Enhanced Chemiluminescent Reactions," <i>Journal of Immunoassay</i> vol. 17 no. 1: pp. 67-83 (1996).
	Kuramitsu, et al., "A Large-Scale Preparation and Some Physiochemical Properties of RecA Protein", <i>J. Biochem</i> , vol. 90, pp. 1033-1045, 1981.
	Kwok, Pui-Yan, "Methods for Genotyping Single Nucleotide Polymorphisms," <i>Annu. Rev. Genomics Hum. Genet.</i> vol. 2: pp. 235-258 (2001).
	Lander et al., "The Chipping Forecast," Supplement to <i>Nature Genetics</i> vol. 21 no. 1: pp. 1-60 (January 1999).
	Langer et al., "A Genetic Screen Identifies Novel Non-Compatible <i>IoxP</i> Sites," <i>Nucleic Acids Research</i> vol. 30: pp. 3067-3077 (2002).
	Larin et al., "Review: Advances in Human Artificial Chromosome Technology," <i>Trends in Genetics</i> vol. 18 no. 6: pp. 313-319 (2002).
	Lawrence, et al., "A Fluorescence In Situ Hybridization Approach for Gene Mapping and the Study of Nuclear Organization", <i>Genome Analysis</i> , 1:1 (1990)
	Leahy, et al., "Topography of the Interaction of recA Protein with Single-stranded Deoxyoligonucleotides," <i>J. Biol. Chem.</i> , 261:6954 (1986).
	Lohse et al., "Double Duplex Invasion by Peptide Nucleic Acid: A General Principle for Sequence-Specific Targeting of Double-Stranded DNA," <i>Proc. Natl. Acad. Sci. USA</i> vol. 96 no. 21: pp. 11804-11808 (October 12, 1999).
	Lovett, et al., "Purification of a RecA Protein Analogue from <i>Bacillus subtilis</i> ," <i>J. Biol. Chem.</i> , vol. 260, No. 6 pp. 3305-3313 (1985)
	Lowenhaupt, et al., " <i>Drosophila melanogaster</i> Strand Transferase", <i>J. Biol. Chem.</i> , 264:20568 (1989)
	Lundqvist et al., "Influence of Different Luminols on the Characteristics of the Chemiluminescence Reaction in Human Neutrophils," <i>J. Biolumin. Chemilumin.</i> vol. 10 no. 6: pp. 353-359 (1995).
✓	Madiraju et al., "Properties of a Mutant <i>recA</i> -Encoded Protein Reveal a Possible Role for <i>Escherichia Coli recF</i> -Encoded Protein in Genetic Recombination," <i>Proc. Natl. Acad. Sci. USA</i> vol. 85 no. 18: pp. 6592-6596 (1988).
SB	Maher III, et al., "Inhibition of DNA Binding Proteins by Oligonucleotide-Directed Triple Helix Formation," <i>Science</i> 245:725-730 (1989).

EXAMINER

/Sarae Bausch/

DATE CONSIDERED

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
SB	Makino, et al., "Monoclonal Antibodies with Specific Effects on Partial Activities of recA Protein of <i>Escherichia coli</i> ", <i>J. Biol. Chem.</i> , 260, 15402, 1985
	McCarthy, et al., "Sensitive homologous recombination strand-transfer assay: Partial purification of a <i>Drosophila melanogaster</i> enzyme and detection of sequence effects on the strand-transfer activity of RecA protein", <i>Proc. Natl. Acad. Sci. USA</i> , 85:5854 (1988)
	McEntee, et al., "Binding of the recA Protein of <i>Escherichia coli</i> to Single- and Double-Stranded DNA", <i>J. Biol. Chem.</i> , 256:8835-8844 (1981)
	Menetski, et al., "Enhancement of <i>Escherichia coli</i> RecA Protein Enzymatic Function by dATP," <i>Biochem.</i> 28:5871-5881 (1989)
	Moore, et al., "Purification and Characterization of a Protein from Human Cells Which Promotes Homologous Pairing of DNA", <i>J. Biol. Chem.</i> , 19:11108-11117 (1990)
	Moreau, et al., "Rec-A Protein-promoted Cleavage of Lex-A Repressor in the Presence of ADP and Structural Analogues of Inorganic Phosphate, the Fluoride Complexes of Aluminum and Beryllium", <i>J. Biol. Chem.</i> , 264:2302-2306 (1989)
	Morrical, et al., "Stabilization of recA Protein-ssDNA Complexes by the Single-Stranded DNA Binding Protein of <i>Escherichia coli</i> ", <i>Biochemistry</i> , 29:837 (1990)
	Moser, et al., "Sequence-Specific Cleavage of Double helical DNA by Triple Helix Formation", <i>Science</i> 238:645-650 (1987)
	Nielsen et al., "An Introduction to Peptide Nucleic Acid," <i>Current Issues in Molecular Biology</i> vol. 1 no. 2: pp. 89-104 (1999).
	Nielsen et al., "Peptide Nucleic Acids: On the Road to New Gene Therapeutic Drugs," <i>Pharmacology and Toxicology</i> vol. 86: pp. 3-7 (2000).
	Nielsen, "DNA Analogues with Nonphosphodiester Backbones," <i>Annu. Rev. Biophys. Biomol. Struct.</i> vol. 24: pp. 167-183 (1995).
	Nielsen, "Peptide Nucleic Acid: A Versatile Tool in Genetic Diagnostics and Molecular Biology," <i>Current Opinion in Biotechnology</i> vol. 12 no. 1: pp. 16-20 (2001).
	Nielsen, "Targeting Double Stranded DNA with Peptide Nucleic Acid (PNA)," <i>Current Medicinal Chemistry</i> vol. 8 no. 5: pp. 545-550 (2001).
✓	Norden et al., "Base Orientation of Second DNA in Rec-A-DNA Filaments", <i>The Journal of Biological Chemistry</i> , 273(25): 15682-15686 (1998)
SB	Peterson et al., "Transgenic Mice Containing a 248-Kb Yeast Artificial Chromosome Carrying the Human Beta-Globin Locus Display Proper Developmental Control of Human Globin Genes," <i>Proc. Natl. Acad. Sci. USA</i> vol. 90 no. 16: pp. 7593-7597 (August 15, 1993).

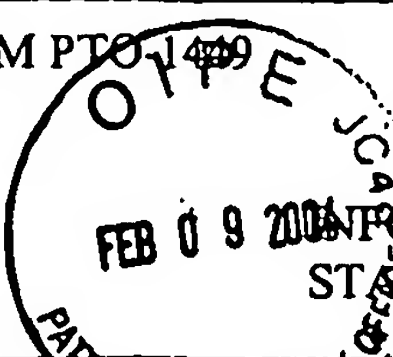
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
SB	Peterson et al., "Use of Yeast Artificial Chromosomes (Yacs) for Studying Control of Gene Expression: Correct Regulation of the Genes of a Human Beta-Globin Locus YAC Following Transfer to Mouse Erythroleukemia Cell Lines," <i>Proc. Natl. Acad. Sci. USA</i> vol. 90 no. 23: pp. 11207-11211 (December 1, 1993).
	Podyminogin, et al., "Sequence-Specific Covalent Modification of DNA by Cross-Linking Oligonucleotides. Catalysis by RecA and Implication for the Mechanism of Synaptic Joint Formation", <i>Biochemistry</i> , vol. 34, pp. 13098-13108, 1995
	Pusch et al., "MALDI-TOF Mass Spectrometry-Based SNP Genotyping," <i>Pharmacogenomics</i> vol. 3 no. 4: pp. 537-548 (2002).
	Radding, Charles M., "Helical Interactions in Homologous Pairing and Strand Exchange Driven by RecA Protein", <i>The Journal of Biological Chemistry</i> , vol. 266, No. 9, pp. 5355-5358, Mar. 1991.
	Radding, Charles M., "Helical RecA Nucleoprotein Filaments Mediate Homologous Pairing and Strand Exchange", <i>Biochem. Biophys. Acta.</i> , 1008 (1989), pp. 131-145.
	Radding, et al., "Homologous Pairing and Strand Exchange in Genetic Recombination." <i>Ann. Rev. Genet.</i> 16:405 (1983) 25:1990.
	Revet, et al., "Homologous DNA Targeting with RecA Protein-coated Short DNA Probes with Electron Microscope Mapping on Linear Duplex Molecules", <i>J. Mol. Biol.</i> , vol. 232, pp. 779-791, 1993
	Rigas, et al., "Rapid Plasmid Library Screening Using RecA Coated Biotinylated Probes", <i>PNAC</i> , vol. 83, pp. 9591-9595, Dec. 1986
	Roca, et al., "The RecA Protein: Structure and Function," <i>Crit. Rev. Biochem. Molec. Biol.</i> 25:415 (1990).
	Roche Diagnostics GmbH, "Classical Structural Genomics," http://www.roche-applied-science.com/usa/3327175B.pdf
	Roche Diagnostics GmbH, "recA Protein," Cat. No. 1 449 567, Cat. No. 1 449 575, Version 3 (September 1999).
	Sena, et al., "Targeting in Linear DNA Duplexes With Two Complementary Probe Strands for Hybrid Stability", <i>Nature Genetics</i> , vol. 3, pp. 365-372 (1993)
	Shah et al., "Multiple <i>BCR-ABL</i> Kinase Domain Mutation Confer Polyclonal Resistance to the Tyrosine Kinase Inhibitor Imatinib (STI571) in Chronic Phase and Blast Crisis Chronic Myeloid Leukemia," <i>Cancer Cell</i> vol. 2: pp. 117-125 (August 2002).
	Shibata et al., "Homologous Genetic Recombination as an Intrinsic Dynamic Property of a DNA Structure Induced by RecA/Rad51-Family Proteins: A Possible Advantage of DNA over RNA as Genomic Material," <i>Proc. Natl. Acad. Sci. USA</i> vol. 98 no. 15: pp. 8425-8432 (July 17, 2001).
	Shibata, et al., "Purification of RecA Protein From <i>Escherichia coli</i> ", <i>Method in Enzymology</i> , vol. 100, pp. 197-209.
↓	Shibata, et al., "Purified <i>Escherichia coli</i> recA Protein catalyzed homologous pairing of superhelical DNA and single-stranded fragments." <i>Proc. Natl. Acad. Sci. USA</i> 76:1638 (1979).
SB	Shibata, T., et al., "Homologous Pairing in Genetic Recombination", <i>J. Bio. Chem.</i> , 256:7557 (1981)

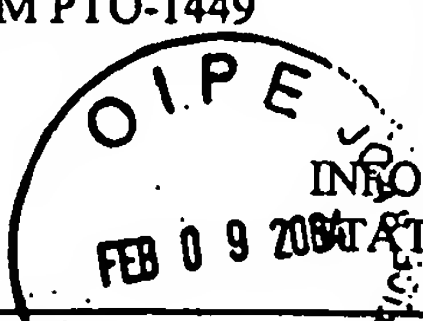
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER INITIALS	
SB	Shinohara et al., "Rad51/RecA Protein Families and the Associated Proteins in Eukaryotes," <i>Mutation Research</i> vol. 435: pp. 13-21 (1999).
	Shinohara, et al., "Cloning of Human, Mouse and Fission Yeast Recombination Genes Homologous to RAD51 and RecA", <i>Nature Genetics</i> , vol. 4, pp. 239-243, Jul. 1993.
	Shoemaker et al., "Quantitative Phenotypic Analysis of Yeast Deletion Mutants Using a Highly Parallel Molecular Bar-Coding Strategy," <i>Nature Genetics</i> vol. 14 no. 4: pp. 450-456 (1996).
	Sluka, et al., "Synthesis of a Sequence-Specific DNA-Cleaving Peptide", <i>Science</i> , 238:1129 (1987)
	Sugino, et al., "ATP-independent DNA strand transfer catalyzed by protein(s) from meiotic cells of the yeast <i>Saccharomyces cerevisiae</i> ", <i>Proc. Natl. Acad. Sci. USA</i> , 85:3683, (1988)
	Syvänen, Ann-Christine, "Accessing Genetic Variation: Genotyping Single Nucleotide Polymorphisms," <i>Nature: Reviews</i> vol. 2: pp. 930-942 (December 2001).
	Szybalski, Wacław, "RecA-Mediated Achilles' Heel Cleavage," <i>Current Opinion in Biotechnology</i> vol. 8: pp. 75-81 (1997).
	Teintze, et al., RecA Assisted Rapid Enrichment of Specific Clones From Model DNA Libraries, <i>Biochemical and Biophysical Research Communications</i> , vol. 211, No. 3, pp. 804-811, Jun. 26, 1995.
	Thorpe et al., "Enhanced Chemiluminescent Reactions Catalyzed by Horseradish Peroxidase," <i>Methods in Enzymology</i> vol. 133: pp. 331-353 (1986).
	Tsang, et al., "Networks of DNA and RecA Protein Are Intermediates in Homologous Pairing", <i>Biochemistry</i> , vol. 24, pp. 3226-3232, 1985
↓	Usher et al., "Targeting of a Chimeric Oligonucleotide to dsDNA for Site-Specific Gene Repair," <i>FAESB Journal</i> vol. 15 no. 4: Abstract No. 435.2, p. A518 (March 2001).
SB	Yoshimura et al., "Cloning and Sequence of the Human RecA-like Gene cDNA," <i>Nucleic Acids Research</i> vol. 21 no. 7: p. 1665 (1993).

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